

IN THE CLAIMS:

1 – 9 (Canceled)

10. (Previously Presented) A process for preparing anhydrous lactitol crystals belonging to the orthorhombic $P2_12_12_1$ crystal system and having unit cell constants about $a = 9.6 \text{ \AA}$, $b = 11.1 \text{ \AA}$, $c = 14.0 \text{ \AA}$, by crystallizing from an aqueous solution which contains not less than 70%, of lactitol on dry matter, characterized by bringing said aqueous lactitol solution to supersaturation in regard to lactitol, and subjecting the solution to crystallization conditions at a temperature between 70 and 150°C by boiling and/or cooling crystallization, allowing said solution to crystallize until a substantial first crystal yield is obtained, and conditioning said first crystal yield at a temperature of 70-100°C for a sufficient time to allow said first crystal yield to convert into a second crystal yield comprising said orthorhombic anhydrous lactitol crystals, recovering said orthorhombic anhydrous lactitol crystals from the mother liquor, and optionally washing and drying said crystals.

11. (Previously Presented) A process according to Claim 10, characterized in that said crystallization is performed with spontaneous nucleation or with seeding with seeds of crystalline lactitol, and that said first crystal yield comprises monoclinic anhydrous lactitol.

12. (Original) A process according to Claim 10 or 11, characterized in that said crystallization is performed by cooling said lactitol solution from a starting temperature of about 100-80°C to an end temperature of about 70-80°C and conditioning said first crystal yield at said end temperature.

13. (Previously Presented) A process according to Claim 11 characterized in that a mixture containing orthorhombic anhydrous lactitol and monoclinic anhydrous lactitol is recovered.

14. (Previously Presented) A process for preparing anhydrous lactitol crystals belonging to the orthorhombic $P2_12_12_1$ crystal system and having unit cell constants about $a = 9.6 \text{ \AA}$, $b = 11.1 \text{ \AA}$, $c = 14.0 \text{ \AA}$, by crystallizing from an aqueous solution to which contains not less than 70% of lactitol on dry matter, characterized by bringing said aqueous lactitol solution to supersaturation in regard to lactitol, and subjecting the solution to crystallization conditions at a temperature between 70 and 150°C by boiling and/or cooling crystallization, seeding said supersaturated solution with seed crystals of orthorhombic anhydrous lactitol and separating the resulting orthorhombic anhydrous lactitol crystals from the mother liquor, and optionally washing and drying, the resulting orthorhombic anhydrous lactitol crystals being anhydrous lactitol crystals belonging to the orthorhombic $P2_12_12_1$ crystal system and having unit cell constants about $a = 9.6 \text{ \AA}$, $b = 11.1 \text{ \AA}$, $c = 14.0 \text{ \AA}$.

15. (Previously Presented) A process according to claim 14, comprising

- (a) evaporating an aqueous solution of lactitol to a concentration of 80-95% by weight and to make a supersaturated solution;
- (b) seeding the supersaturated solution at a temperature within the range 120-80°C ;
- (c) optionally evaporating further while adding lactitol solution within said temperature range to increase the crystal content;

(d) cooling the resulting mixture;

(e) separating the orthorhombic anhydrous lactitol crystals from the mother liquor; and

(f) washing and drying said crystals.

16. (Original) A process according to Claim 14 or 15, wherein said crystals are provided in a crystal foot of orthorhombic anhydrous lactitol.

17. (Previously Presented) A process for preparing anhydrous lactitol crystals belonging to the orthorhombic $P2_12_12_1$ crystal system and having unit cell constants about $a = 9.6 \text{ \AA}$, $b = 11.1 \text{ \AA}$, $c = 14.0 \text{ \AA}$, by crystallizing from an aqueous solution which contains not less than 70%, of lactitol on dry matter, characterized by bringing said aqueous lactitol solution to supersaturation in regard to lactitol, and subjecting said solution to slow crystallization conditions at a temperature between 150 and 70°C by slow boiling and/or cooling crystallization, recovering said orthorhombic anhydrous lactitol crystals from the mother liquor, and optionally washing and drying said crystals.

18. (Original) A process according to Claim 17, characterized by evaporating an aqueous solution of lactitol to a concentration of 85-95% by weight and seeding the supersaturated solution by adding seed crystals of monoclinic and/or orthorhombic anhydrous lactitol in a temperature range 80-100°C, and cooling the mixture slowly to an end temperature ranging from 70°C to 90°C, and recovering the resulting orthorhombic anhydrous lactitol crystals from the mother liquor.

19. (Original) A process according to Claim 18, characterized by additionally conditioning the crystal yield at said end temperature prior to recovering said crystals.

20. (Previously Presented) A process according to any one of the preceding Claim 10 or 14 or 17 characterized in that the crystallization of orthorhombic anhydrous lactitol is improved by one or more measures selected from the addition of accelerating impurities such as lactulitol to the aqueous solution of lactitol, the increase of supersaturation of said solution, the prolonging of the crystallization and/or conditioning time, and the addition of seed crystals of orthorhombic anhydrous lactitol (β) to said solution.

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25. (Previously Presented) The process according to Claim 11 wherein seeds of monoclinic anhydrous lactitol is utilized in said crystallization.

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39. (Previously Presented) The process according to Claim 15 wherein in step (d) the mixture is cooled to a temperature of 70-100°C.

40. (Previously Presented) The process according to Claim 39 wherein in step (d) the mixture is cooled to a temperature of 70-80°C.

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